EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	186	526/124.2	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 16:26
L2	1006	526/317.1	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 16:26
L3	1	L1 and L2	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 16:26
S1	1	"10533432"	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:00
S2	525835	polyester	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:01
S3	263736	decomposition	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:01
S4	34823	S2 and S3	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:01
S5	3761221	base	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:01
S6	21920	S4 and S5	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:01
S7	3212993	water insoluble	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:02
S8	19660	S6 and S7	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:02
S9	19660	S7 and S8	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:02

EAST Search History

S10	254975	hydrolysis	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:02
S11	5462	S9 and S10	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:03
S12	3173697	supercritical water	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:03
S13	5442	S11 and S12	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:03
S14	5442	S12 and S13	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:03
S15	2686487	organic acid	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:04
S16	5425	S14 and S15	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:04
S17	558541	calcium	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:04
S18	3131	S16 and S17	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:05
S19	787736	calcium carbonate	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:05
S20	3131	S18 and S19	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:05
S21	2030594	polymer	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:05
S22	2982	S20 and S21	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:06

EAST Search History

S23	5833527	polyester without chlorine	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:06
S24	2982	S22 and S23	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:07
S25	2982	S24 and S3	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:21
S26	1508160	decomposition of polyester	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:22
S27	503971	S26 and S12	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:22
S28	254975	hydrolysis	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:23
S29	70993	S27 and S28	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:23
S30	72	Rigolac M-580	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:36
S31	263736	decomposition	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:34
S32	20	S30 and S31	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:34
S33	254975	hydrolysis	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:36
S34	4	S30 and S33	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2007/07/18 11:36

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=> s polyester
        270699 POLYESTER
        240107 POLYESTERS
L1      355774 POLYESTER
                  (POLYESTER OR POLYESTERS)

=> s decomposition
        176709 DECOMPOSITION
          1146 DECOMPOSITIONS
        177511 DECOMPOSITION
                  (DECOMPOSITION OR DECOMPOSITIONS)
        443159 DECOMPN
          4898 DECOMPNS
        444816 DECOMPN
                  (DECOMPN OR DECOMPNS)
L2      512161 DECOMPOSITION
                  (DECOMPOSITION OR DECOMPN)

=> s L1 and L2
L3        4829 L1 AND L2

=> s supercritical water
         26307 SUPERCRITICAL
             1 SUPERCRITICALS
         26307 SUPERCRITICAL
                  (SUPERCRITICAL OR SUPERCRITICALS)
         43980 SUPERCRIT
             1 SUPERCRITS
         43981 SUPERCRIT
                  (SUPERCRIT OR SUPERCRITS)
         45511 SUPERCRITICAL
                  (SUPERCRITICAL OR SUPERCRIT)
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       2558924 WATER
        265562 WATERS
       2615943 WATER
                 (WATER OR WATERS)
L4        3471 SUPERCRITICAL WATER
                 (SUPERCRITICAL(W)WATER)

=> s L3 and L4
L5          19 L3 AND L4

=> d L5 1-19 bib abs

L5   ANSWER 1 OF 19  CAPLUS  COPYRIGHT 2007 ACS on STN
AN   2005:1106213  CAPLUS
DN   143:398451
TI   Reactor and hydrothermal decomposition device for heavy metal
     determination in organic compounds
IN   Konno, Masanori; Nakatsuka, Asao; Kikuchi, Hideo; Sone, Hiroshi
PA   Miyagi Prefecture, Japan
SO   Jpn. Kokai Tokkyo Koho, 11 pp.
     CODEN: JKXXAF
DT   Patent
LA   Japanese
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     ---------------     ----   --------    --------------------    --------
PI   JP 2005283508        A     20051013    JP 2004-101414          20040330
PRAI JP 2004-101414               20040330
AB   The device comprises a reactor made of Ni alloy or Au alloy, a heater, and
     a temperature control unit.  The sample is decomposed in the reactor
containing high
     temperature (≥200 °C) and high pressure (≥10 MPa) water or
     supercrit. water and an oxidant.  The decomposed residue
     is further treated by acid or alkali, followed by anal. of heavy metals.
     The device is suited for anal. of plastic, biol. material, or
     environmental samples.

L5   ANSWER 2 OF 19  CAPLUS  COPYRIGHT 2007 ACS on STN
AN   2005:155746  CAPLUS
DN   142:240905
TI   Selective recovery of copolymer blocks using supercritical fluids
IN   Okuyama, Manabu; Inomata, Hiroshi; Watanabe, Masaru
PA   Mitsubishi Chemical Corp., Japan
SO   Jpn. Kokai Tokkyo Koho, 7 pp.
     CODEN: JKXXAF
DT   Patent
LA   Japanese
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     ---------------     ----   --------    --------------------    --------
PI   JP 2005048032        A     20050224    JP 2003-204942          20030731
PRAI JP 2003-204942               20030731
AB   The recovery method includes contacting block copolymers bonded via
     hydrolyzable groups with supercrit. fluids so as to give decompn
     . products containing ≥1 component blocks.  Thus, a polyester
     thermoplastic elastomer comprising blocks of poly(butylene terephthalate)
     (PBT) and poly(tetramethylene glycol) (PTMG; MW 1800) was contacted with
     water at 450° and 30 MPa for 30 s, then quickly cooled to show
     complete decomposition of the hard segment (PBT) and recovery of the
     soft segment (PTMG) with MW 1600.

L5   ANSWER 3 OF 19  CAPLUS  COPYRIGHT 2007 ACS on STN
AN   2004:1151009  CAPLUS
DN   143:249221
TI   Plastic recycling using supercritical fluids
```

AU Okajima, Idzumi; Sako, Takeshi
CS Shizuoka Univ., Japan
SO Nippon Gomu Kyokaishi (2004), 77(10), 353-358
CODEN: NGOKAF; ISSN: 0029-022X
PB Nippon Gomu Kyokai
DT Journal; General Review
LA Japanese
AB A review. the cheap, stable, and environmentally friendly supercrit. water (Tc =374°, Pc = 22.1 MPa) and supercrit. MeOH (Tc = 239°, Pc = 8.09 MPa) were used in plastic recycling, such as PET and PEN recycling and crosslinked polyethylene (I) breakdown proceeded under supercrit. MeOH, the polyamide/I laminate separation and debromination of fireproof Br-containing polymers proceeded under subcrit. water, and the decomposition and recovery of CFRP and GFRP and gasification and H production of plastics proceeded under supercit. water.

L5 ANSWER 4 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2003:390698 CAPLUS
DN 139:165439
TI Hydrolysis of polyethylene terephthalate (PET) under subcritical and supercritical water using batch system
AU Yuk, Hyun Mi; Park, Jung Hoon; Park, Sangdo; Lee, Choul-Ho
CS Energy & Environment Research Department, Korea Institute of Energy Research, Daejeon, 305-343, S. Korea
SO Hwahak Konghak (2003), 41(2), 249-255
CODEN: HHKHAT; ISSN: 0304-128X
PB Korean Institute of Chemical Engineers
DT Journal
LA Korean
AB To identify the hydrolysis characteristics of PET the decomposition rate and yield for conversion from PET into products were compared by varying reaction temperature, pressure and time in the range of the subcrit. and supercrit. water. Expts. were conducted by the batch bomb reactors using the molten salt bath with temperature ranging 300-400° and pressure ranging 15-40 MPa and reaction time ranging 1-30 min, and then the product distribution by the reaction variables was investigated. The main product of reaction was its monomer, terephthalic acid (TPA). But little gaseous products were formed in these reactions. Decompns. of PET and yields of TPA were increased with increasing pressure and reaction time at each temperature The decomposition ratio of PET and TPA yield after reaction for 30 min were 85.33% and 83.55% at 300° and 30 MPa and 96.45% and 94.45% at 350° and 30 MPa in the subcrit. region, but 98.25% and 98.24% at 400° and 30 MPa in the supercrit. region after reaction for 8 min resp. Therefore PET could be successfully decomposed in a very short reaction time under supercrit. water condition. The hydrolysis reaction of PET was reversible second order and the activation energy was 144 kJ/mol under 30 MPa and 350°.

L5 ANSWER 5 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2002:939013 CAPLUS
DN 138:339166
TI Chemical recycling of plastics using supercritical water
AU Nagase, Yoshiyuki
CS Technical Development Dept., Kobe Steel Ltd., Japan
SO Chorinkai Ryutai no Subete (2002), 471-475. Editor(s): Arai, Yasuhiko. Publisher: Tekuno Shisutemu, Tokyo, Japan.
CODEN: 69DIRP; ISBN: 4-924728-41-1
DT Conference; General Review
LA Japanese
AB A review relates to the recycling and decomposition of plastics, such as PET and polyurethanes, in supercrit. water.

L5 ANSWER 6 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2002:539066 CAPLUS
DN 137:370675
TI ATR-IR spectroscopy of superheated water and in situ study of the hydrothermal decomposition of poly(ethylene terephthalate)
AU Kazarian, S. G.; Martirosyan, G. G.
CS Department of Chemical Engineering and Chemical Technology, Imperial College of Science, Technology and Medicine, London, SW7 2BY, UK
SO Physical Chemistry Chemical Physics (2002), 4(15), 3759-3763
CODEN: PPCPFQ; ISSN: 1463-9076
PB Royal Society of Chemistry
DT Journal
LA English
AB Opportunities exist to exploit the unique properties of superheated or near-critical water in the recycling of polymers. Exposure of poly(ethylene terephthalate) (PET) to hot water at 180°C and 1.0 MPa has resulted in the decomposition of PET and the formation of terephthalic acid. This process was followed, for the first time, via in situ ATR-IR spectroscopy. The high-temperature ATR-IR (attenuated total reflection IR) approach allows the measurement of IR spectra of polymers subjected to superheated, near-critical or supercrit. water. The ATR-IR spectra of liquid water in the temperature range 25-300°C have also been measured, and evidence of the reduction in the degree of hydrogen bonding in water under these conditions was obtained. Good potential exists to apply the approach developed here to study processes in near-critical water.
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2002:14537 CAPLUS
DN 136:86740
TI Experiment on supercritical water. Decomposition of PET bottle
AU Kamiya, Toru
CS Dep. Environ. Eng., Shimizu Tech. High Sch., Japan
SO Chorinkai Saishin Gijutsu (2001), 5, 24-27
CODEN: CSGIF5
PB Jasuko Repotosha
DT Journal
LA Japanese
AB An experiment of decomposition of PET bottle in supercrit. water was demonstrated for high school students. Terephthalic acid and ethylene glycol were recovered by the decomposition in an autoclave at 250 kg/cm2 and 250-350°.

L5 ANSWER 8 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2001:822992 CAPLUS
DN 136:86790
TI Decomposition of fiber reinforced plastics using fluid at high temperature and pressure
AU Sugeta, Tsutomu; Nagaoka, Shoji; Otake, Katsuto; Sako, Takeshi
CS National Institute of Advanced Industrial Science and Technology, Higashi, Tsukuba, 305-8565, Japan
SO Kobunshi Ronbunshu (2001), 58(10), 557-563
CODEN: KBRBA3; ISSN: 0386-2186
PB Kobunshi Gakkai
DT Journal
LA Japanese
AB Decomposition of fiber-reinforced plastics (FRP), which is a refractory plastic waste, was investigated using a supercrit. water and alkali solution with alc. at high temperature and pressure. Plastics contained in FRP were decomposed and liquid product and fiber were recovered. Unsatd. polyester FRP was treated by supercrit. water at 380° and most of the matrix was decomposed during 5 min reaction time. The main products were carbon dioxide and carbon monoxide in gas phase and styrene derivs. and phthalic

acid in liquid phase. After the treatment with supercrit. water for 5 min, no significant change in the fiber recovered was detected using scanning electron microscope or IR spectroscopy. On the other hand, phenolic resin used as a matrix of CFRP (carbon fiber reinforced plastics) was not decomposed using only supercrit. water. However, decomposition was promoted by supercrit. water with alkali. Furthermore, with use of alc.-alkali aqueous solution at high temperature phenolic resin was mostly broken down to soluble products.

L5 ANSWER 9 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2001:504318 CAPLUS
DN 135:141576
TI Waste treatment and recycling using supercritical fluids
AU Okajima, Idzumi; Sako, Takeshi
CS Grad. Sch. Sci. Technol., Shizuoka Univ., 3-5-1 Johoku, Hamamatsu, 432-8561, Japan
SO Oyo Butsuri (2001), 70(7), 842-846
CODEN: OYBSA9; ISSN: 0369-8009
PB Oyo Butsuri Gakkai
DT Journal; General Review
LA Japanese
AB A review with 10 refs. on supercrit. fluids such as water and alcs. as environmentally benign solvents in chemical processes and environment-protection technologies. The topics include unique properties of supercrit. fluids, and their application to treatment of waste toxic substances, for example, the decomposition of dioxins in fly ash and polychlorinated biphenyls (PCBs) using supercrit. water. The topics also include their another application to recycling of plastics, for example, recovery of monomers from polyethylene terephthalate (PET) using supercrit. methanol, decomposition of carbon-fiber-reinforced plastic with supercrit. water, decomposition and debromination of brominated resin using subcrit. water, and decomposition and recovery of each constituent in laminate films using subcrit. water.

L5 ANSWER 10 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2000:431048 CAPLUS
DN 133:74860
TI Application of supercritical method in decomposition recycling of waste plastics
AU Meng, Linghui; Bai, Yongping; Feng, Liqun; Xing, Yuqing
CS Harbin University of Industry, Harbin, 150001, Peop. Rep. China
SO Zhongguo Suliao (1999), 13(9), 76-82
CODEN: ZHSUF5; ISSN: 1001-9278
PB Zhongguo Suliao Bianjibu
DT Journal; General Review
LA Chinese
AB The progress of supercrit. water for recycling waste plastics, such as PET, PC and PE, was reviewed with 15 refs. Compared with conventional methods of retrieving waste plastics, using the special phys. and chemical properties of the supercrit. water to retrieve waste plastics has many advantages such as efficiency, high ratio of retrieved raw materials over processed materials and the aftertreatment technol. is easy. The method establishes a new channel for using waste plastics.

L5 ANSWER 11 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2000:181435 CAPLUS
DN 133:44433
TI Chemical recycling of waste polymers by decomposition in supercritical water
AU Adschiri, Tadafumi
CS Dep. Chem. Eng., Tohoku Univ., Japan

SO Oyo Butsuri (2000), 69(3), 318-319
CODEN: OYBSA9; ISSN: 0369-8009
PB Oyo Butsuri Gakkai
DT Journal; General Review
LA Japanese
AB A review with 14 refs. on the basic research results and industrial examples of the chemical treatment of plastic wastes using supercrit. water. Hydrolysis of condensation polymers such as polyethers, polyesters and polycarbonates has been studied in supercrit. water without acid or base catalysts used. Polyethylene terephthalate was perfectly decomposed to give quant. terephthalic acid. Bisphenol A was also converted into phenol in good yields. Tolylene diisocyanate to tolylene diamine process is illustrated as an industrial chemical recycling.

L5 ANSWER 12 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1999:432494 CAPLUS
DN 131:218549
TI Chemical recycling of wastes using supercritical water
AU Fukuzato, Ryuichi
CS Eng. Co., Kobe Steel, Ltd., Japan
SO Eco Industry (1999), 4(7), 19-29
CODEN: ECINF8; ISSN: 1342-3037
PB Shi Emu Shi
DT Journal; General Review
LA Japanese
AB A review with 11 refs. on chemical recycling process in which waste polymers are hydrolytically decomposed and recovered as the corresponding monomers using supercrit. water. Supercrit. behaviors of water were explained. Chemical, process conditions, and process flow scheme are described for hydrolytic decomposition of polyethylene terephthalate into terephthalic acid and ethylene glycol as well as decomposition of polyurethane into the corresponding diamine and polyol. Decomposition of polycarbonate and polyolefins were also outlined. Photograph of industrial plant for chemical recycling was presented.

L5 ANSWER 13 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1999:207224 CAPLUS
DN 130:239881
TI System for recycling of waste plastics
IN Honchi, Akio; Mukaide, Masaaki; Okawachi, Isao; Tobita, Hiroshi; Yamashita, Toshio; Fukushima, Toshihiko
PA Hitachi, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11080745	A	19990326	JP 1997-245024	19970910
	JP 3653946	B2	20050602		
PRAI	JP 1997-245024		19970910		

AB In the system by converting waste plastics to monomers, oils, and gases using supercrit. water, fuels and oxidizing agents are added to water and mixed for combusting the fuels and for elevating the temperature to the supercrit. or subcrit. state, and then waste plastics are supplied. Alternatively, water is supplied from an inlet of a tubular reactor, while the fuels and oxidizing agents are supplied from the different inlets. The system shows high efficiency for heat transfer and is energy saving.

L5 ANSWER 14 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1999:72369 CAPLUS
DN 130:111143

TI Decomposition of PET in supercritical methanol and supercritical water
AU Goto, Motonobu; Hirose, Tsutomu
CS Fac. Eng., Kumamoto Univ., Kumamoto, 860, Japan
SO Kagaku Sochi (1999), 41(2), 47-51
CODEN: KASOB7; ISSN: 0368-4849
PB Kogyo Chosakai
DT Journal; General Review
LA Japanese
AB A review with 7 refs., on decomposition of PET using supercrit. MeOH and supercrit. water to obtain monomers as chemical recycling.

L5 ANSWER 15 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1998:585618 CAPLUS
DN 129:231704
TI Decomposition treatment method of resin wastes and apparatus therefor
IN Harada, Kazunari; Furuya, Tomiaki; Sasaki, Kunihiko; Tadauchi, Masahiro; Oyazato, Tadahiko; Kanazawa, Satoshi; Gotanda, Takeshi; Baba, Yuko; Kitamura, Hideo; Komatsu, Izuru
PA Toshiba Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10237215	A	19980908	JP 1997-46319	19970228
PRAI JP 1997-46319		19970228		

AB The method includes (a) treating resin wastes in supercrit. water containing acid or base reaction promoter or (b) heat treatment of resin wastes under supercrit. N to produce low-mol.-weight components. The apparatus comprises a cooler to impart brittleness to the wastes, a pulverizer, a mixer for the resin waste and the reaction medium, a reaction tank, a separator to sep. the decomposed products and the medium, and a circulating mechanism.

L5 ANSWER 16 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1998:493547 CAPLUS
DN 129:137025
TI Method of and apparatus for decomposing waste compounds containing hydrolyzable chemical bonds
IN Nagase, Yoshiyuki; Fukuzato, Ryuichi
PA Kobe Steel Ltd., Japan; Mitsui Takeda Chemicals Inc.
SO Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 854165	A1	19980722	EP 1997-100821	19970120
EP 854165	B1	20040407		
R: BE, DE, ES, FR, IT, NL				
JP 09151270	A	19970610	JP 1995-313003	19951130
JP 3659717	B2	20050615		
KR 204839	B1	19990615	KR 1997-222	19970108
US 6255529	B1	20010703	US 1997-784949	19970116
BR 9700111	A	19981201	BR 1997-111	19970117
CN 1188776	A	19980729	CN 1997-102903	19970120
CN 1101417	B	20030212		
PRAI JP 1995-313003	A	19951130		
KR 1997-222	A	19970108		

	US 1997-784949	A	19970116
	BR 1997-111	A	19970117
	EP 1997-100821	A	19970120

AB A method of decomposing wastes containing target compds. having ≥1 ether, ester, amide and isocyanate bond comprises continuously supplying the wastes, e.g., PET polyester oligomers or TID dimer and trimer in a molten or liquid state to a reactor, continuously supplying super-critical H2O or high pressure/high temperature H2O to the reactor, bringing the H2O into contact with the wastes, thereby decomposing the target compds. and then recovering them as raw material compds. or derivs.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 17 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1997:480823 CAPLUS
DN 127:95716
TI Apparatus and decomposition method for chemical plant wastes
IN Nagase, Yoshiyuki; Fukusato, Ryuichi
PA Kobe Steel, Ltd., Japan; Mitsui Takeda Chemical Inc.
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09151270	A	19970610	JP 1995-313003	19951130
	JP 3659717	B2	20050615		
	BR 9700111	A	19981201	BR 1997-111	19970117
	EP 854165	A1	19980722	EP 1997-100821	19970120
	EP 854165	B1	20040407		
	R: BE, DE, ES, FR, IT, NL				
PRAI	JP 1995-313003	A	19951130		
	KR 1997-222	A	19970108		
	US 1997-784949	A	19970116		
	BR 1997-111	A	19970117		

AB The process comprises continuously feeding a chemical plant waste containing compds. with hydrolyzable group such as ether, ester, and amide in a melt or solution state to a reactor while supercrit. water or high temperature and high pressure water is continuously supplied to the reactor to decompose the waste compds. and recover their raw materials. A PET oligomer waste was decomposed at 200° and 30 MPa for 30 min while adding 5 times water to recover 94.8% terephthalic acid.

L5 ANSWER 18 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1997:465551 CAPLUS
DN 127:96205
TI Recovery of terephthalic acid by rapid decomposition of poly(ethylene terephthalate) (PET) in supercritical water as the reaction solvent
AU Adschiri, Tadafumi; Sato, Osamu; Machida, Katuhiko; Saito, Norio; Arai, Kunio
CS Dep. Chemical Engineering, Tohoku University, Sendai, 980-77, Japan
SO Kagaku Kogaku Ronbunshu (1997), 23(4), 505-511
CODEN: KKRBAW; ISSN: 0386-216X
PB Kagaku Kogaku Kyokai
DT Journal
LA Japanese
AB The possibility for chemical recycling of PET via the recovery of terephthalic acid (I) from decomposition of PET with supercrit. water is investigated. PET decomps. to I and ethylene glycol in supercrit. water and the yield of I reaches 91% with purity of 97% under the conditions of 673 K, 40 MPa and reaction time of 12.5 min. Reaction temperature influences the decompn

. rate of PET. It takes 90 min for 90% I recovery at 573 K. Increasing reaction pressure is effective for suppressing char formation or carbon dioxide production during decomposition

L5 ANSWER 19 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1995:526527 CAPLUS
DN 122:321455
TI Biomass conversion in supercritical water for chemical recycle
AU Arai, Kunio
CS Fac. Eng., Tohoku Univ., Sendai, 980-77, Japan
SO Enerugi, Shigen (1995), 16(2), 175-80
CODEN: ENESEB; ISSN: 0285-0494
PB Enerugi Shigen Gakkai
DT Journal; General Review
LA Japanese
AB A review, with 8 refs. The recovery of chemical resources from biomass and waste polymers using supercrit. water is described. Typical samples of polyethers, polyesters, and polyamides were completely hydrolyzed in 10 min at 380-400° and 25-35 MPa. Cellulose was hydrolyzed to glucose and its oligomers. Chitin and chitosan were to mainly glucosamine. Wastes of nylon, polyurethane and polyethylene terephthalate gave their component monomers. This technol. can be applied for waste paper, waste wood, used polymer bottles, used tires etc.

```
=> s polyester
        270699 POLYESTER
        240107 POLYESTERS
L6      355774 POLYESTER
                  (POLYESTER OR POLYESTERS)

=> s water insoluble base
       2558924 WATER
        265562 WATERS
       2615943 WATER
                  (WATER OR WATERS)
         20374 INSOLUBLE
          1292 INSOLUBLES
         21566 INSOLUBLE
                  (INSOLUBLE OR INSOLUBLES)
        185140 INSOL
          1611 INSOLS
        186402 INSOL
                  (INSOL OR INSOLS)
        198433 INSOLUBLE
                  (INSOLUBLE OR INSOL)
        716572 BASE
        160036 BASES
        813055 BASE
                  (BASE OR BASES)
L7          45 WATER INSOLUBLE BASE
                  (WATER(W)INSOLUBLE(W)BASE)

=> s hydrolysis
        434693 HYDROLYSIS
          3161 HYDROLYSES
L8      435585 HYDROLYSIS
                  (HYDROLYSIS OR HYDROLYSES)

=> s L6 and L7
L9            1 L6 AND L7

=> s L6 and L8
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L10        5936 L6 AND L8

=> s L8 and L10
L11        5936 L8 AND L10

=> s supercritical water
          26307 SUPERCRITICAL
              1 SUPERCRITICALS
          26307 SUPERCRITICAL
                  (SUPERCRITICAL OR SUPERCRITICALS)
          43980 SUPERCRIT
              1 SUPERCRITS
          43981 SUPERCRIT
                  (SUPERCRIT OR SUPERCRITS)
          45511 SUPERCRITICAL
                  (SUPERCRITICAL OR SUPERCRIT)
        2558924 WATER
         265562 WATERS
        2615943 WATER
                  (WATER OR WATERS)
L12        3471 SUPERCRITICAL WATER
                  (SUPERCRITICAL(W)WATER)

=> s L11 and L12
L13          15 L11 AND L12

=> d L13 1-15 bib abs

L13  ANSWER 1 OF 15  CAPLUS  COPYRIGHT 2007 ACS on STN
AN   2006:221592  CAPLUS
DN   144:451494
TI   Reactions of polymers in supercritical fluids for chemical recycling of
     waste plastics
AU   Goto, M.; Sasaki, M.; Hirose, T.
CS   Department of Applied Chemistry and Biochemistry, Kumamoto University,
     Kumamoto, 860-8555, Japan
SO   Journal of Materials Science (2006), 41(5), 1509-1515
     CODEN: JMTSAS; ISSN: 0022-2461
PB   Springer
DT   Journal; General Review
LA   English
AB   A review describes degradation of polymers in sub- or supercrit. fluids.
     Chemical recycling of waste plastics is important issue.  We have applied
     reaction in water or organic solvent in sub- or supercrit. condition to
     convert polymers into its monomers.  Condensed polymers such as
     polyethylene terephthalate or nylon 6 were depolymd. to its monomers by
     hydrolysis of alcoholysis in supercrit. water
     or alc.  The other polymers such as phenol resin and fiber reinforced
     plastics (FRP) were also decomposed to small mols. by solvolysis.
RE.CNT  17    THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13  ANSWER 2 OF 15  CAPLUS  COPYRIGHT 2007 ACS on STN
AN   2005:155746  CAPLUS
DN   142:240905
TI   Selective recovery of copolymer blocks using supercritical fluids
IN   Okuyama, Manabu; Inomata, Hiroshi; Watanabe, Masaru
PA   Mitsubishi Chemical Corp., Japan
SO   Jpn. Kokai Tokkyo Koho, 7 pp.
     CODEN: JKXXAF
DT   Patent
LA   Japanese
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.      DATE
     --------------      ----   --------    -------------------  --------
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PI JP 2005048032 A 20050224 JP 2003-204942 20030731
PRAI JP 2003-204942 20030731
AB The recovery method includes contacting block copolymers bonded via hydrolyzable groups with supercrit. fluids so as to give decomposition products containing ≥1 component blocks. Thus, a polyester thermoplastic elastomer comprising blocks of poly(butylene terephthalate) (PBT) and poly(tetramethylene glycol) (PTMG; MW 1800) was contacted with water at 450° and 30 MPa for 30 s, then quickly cooled to show complete decomposition of the hard segment (PBT) and recovery of the soft segment (PTMG) with MW 1600.

L13 ANSWER 3 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2004:413008 CAPLUS
DN 140:407767
TI Depolymerization process for plastics
IN Hidaka, Masaru; Nakagawa, Takaharu; Urabe, Toyoyuki; Maekawa, Tetsuya; Yoshida, Hiroyuki
PA Matsushita Electric Works, Ltd., Japan
SO PCT Int. Appl., 18 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004041917	A1	20040521	WO 2003-JP14136	20031106
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003277574	A1	20040607	AU 2003-277574	20031106
EP 1580222	A1	20050928	EP 2003-810619	20031106
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1711312	A	20051221	CN 2003-80102845	20031106
US 2006247465	A1	20061102	US 2006-533432	20060421
PRAI JP 2002-324398	A	20021107		
JP 2003-281994	A	20030729		
WO 2003-JP14136	W	20031106		

AB A process is provided for decomposing a polymeric substance (e.g., polyester) into monomers or oligomers by hydrolysis with sub- or super-critical water, wherein at least a part of the polymeric substance is composed of a polymer containing units derived from an organic acid in the mol. structure and that the polymeric substance is brought into contact with sub- or super-critical water in the presence of a slightly water-soluble base (e.g., CaCO3, BaCO3) resulting in improved yield of the organic acid and the depolymn. rate.
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 4 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2003:805818 CAPLUS
DN 139:292901
TI Preparation of polyamides from (waste) polyesters with low environmental hazards
IN Nagaya, Shigeo; Komura, Kiyoshi; Watanabe, Shozo; Hirai, Susumu; Nakamoto, Takao; Niidate, Hitoshi; Morita, Hiroaki
PA Chubu Electric Power Co., Inc., Japan; Showa Electric Wire and Cable Co.,

Ltd.
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003292616	A	20031015	JP 2002-105652	20020408
PRAI	JP 2002-105652		20020408		

AB In the process, (waste) polyesters [e.g., poly(alkylene terephthalate)] are poured into reactors with diamines and undergone hydrolysis in super- or subcrit. water to generate dicarboxylic acids which are polycondensed with the said diamines to afford polyamides. On discharge of the formed polyamides, the reactors may be filled with supercrit. CO2 and then cooled and depressurized. Thus, waste PET bottles were crushed and processed as above with hexamethylenediamine to give nylon 6T of Mw .apprx.10,000.

L13 ANSWER 5 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2003:787860 CAPLUS
DN 140:407601
TI High-speed monomerization of poly(L-lactic acid) by hydrolysis under high-pressure and high-temperature conditions
AU Tsuji, Hideto
CS Dep. of Engineering, Toyohashi University of Technology, Japan
SO Kobunshi Kako (2003), 52(8), 338-343
CODEN: KOKABN; ISSN: 0023-2564
PB Kobunshi Kankokai
DT Journal; General Review
LA Japanese
AB A review. Methods for monomer recycling of poly(L-lactic acid) are discussed with the emphasis on hydrolysis in molten state using supercrit. water over depolymn.

L13 ANSWER 6 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2003:390698 CAPLUS
DN 139:165439
TI Hydrolysis of polyethylene terephthalate (PET) under subcritical and supercritical water using batch system
AU Yuk, Hyun Mi; Park, Jung Hoon; Park, Sangdo; Lee, Choul-Ho
CS Energy & Environment Research Department, Korea Institute of Energy Research, Daejeon, 305-343, S. Korea
SO Hwahak Konghak (2003), 41(2), 249-255
CODEN: HHKHAT; ISSN: 0304-128X
PB Korean Institute of Chemical Engineers
DT Journal
LA Korean
AB To identify the hydrolysis characteristics of PET the decomposition rate and yield for conversion from PET into products were compared by varying reaction temperature, pressure and time in the range of the subcrit. and supercrit. water. Expts. were conducted by the batch bomb reactors using the molten salt bath with temperature ranging 300-400° and pressure ranging 15-40 MPa and reaction time ranging 1-30 min, and then the product distribution by the reaction variables was investigated. The main product of reaction was its monomer, terephthalic acid (TPA). But little gaseous products were formed in these reactions. Decompns. of PET and yields of TPA were increased with increasing pressure and reaction time at each temperature The decomposition ratio of PET and TPA yield after reaction for 30 min were 85.33% and 83.55% at 300° and 30 MPa and 96.45% and 94.45% at 350° and 30 MPa in the subcrit. region, but 98.25% and 98.24% at 400° and 30 MPa in the supercrit. region after reaction for 8 min resp. Therefore PET could be successfully

decomposed in a very short reaction time under supercrit. water condition. The hydrolysis reaction of PET was reversible second order and the activation energy was 144 kJ/mol under 30 MPa and 350°.

L13 ANSWER 7 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2002:938093 CAPLUS
DN 138:309424
TI Hydrolysis reaction in supercritical water
AU Ajiri, Masafumi
CS Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan
SO Chorinkai Ryutai no Subete (2002), 199-203. Editor(s): Arai, Yasuhiko. Publisher: Tekuno Shisutemu, Tokyo, Japan.
CODEN: 69DIRP; ISBN: 4-924728-41-1
DT Conference; General Review
LA Japanese
AB A review with refs., including the utilization of hydrolysis for cellulose, TA recovery from PET, and TDA recovery from TDI, is given.

L13 ANSWER 8 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2002:768906 CAPLUS
DN 138:43961
TI Chemical recycling for waste using supercritical water
AU Nagase, Yoshiyuki
CS Chemical & Environmental Technology Laboratory, Kobe Steel, Ltd., Nishi-ku, Kobe, Hyogo, 651-2271, Japan
SO Koatsuryoku no Kagaku to Gijutsu (2002), 12(3), 217-223
CODEN: KKGIE2; ISSN: 0917-639X
PB Nippon Koatsuryoku Gakkai
DT Journal
LA Japanese
AB A recycling process for wastes using supercrit. water was developed. The monomers obtained from supercrit. water hydrolysis are the raw material of condensation polymers such as poly(ethylene terephthalate), polyurethane and so on. This process was applied to TDI (tolylene diisocyanate) distillation residue. By the process with super- or sub-critical water, TDA can be obtained from the residue comprising TDI oligomers. The plant for the com. use of the chemical recycling process for TDI residue using supercrit. water was constructed at the end of 1997, and is now functioning as an environmentally friendly plant.

L13 ANSWER 9 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2000:302196 CAPLUS
DN 132:322302
TI Efficient depolymerization of recycled thermoplastic polyester
IN Kuroda, Yoshito; Matsubara, Kazuhiro
PA Asahi Chemical Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000129032	A	20000509	JP 1998-308843	19981029
PRAI	JP 1998-308843		19981029		

AB The polymer is dispersed in liquid or supercrit. H2O at 250-450° under high pressure in a molten state and hydrolyzed. Thus, an aqueous dispersion of 0.826 g PET (average particle diameter 1.1 mm) was hydrolyzed in 4.54 g H2O at 300° for 4 min to give 99.8% terephthalic acid and 90.0% ethylene glycol.

L13 ANSWER 10 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2000:181435 CAPLUS
DN 133:44433
TI Chemical recycling of waste polymers by decomposition in supercritical water
AU Adschiri, Tadafumi
CS Dep. Chem. Eng., Tohoku Univ., Japan
SO Oyo Butsuri (2000), 69(3), 318-319
CODEN: OYBSA9; ISSN: 0369-8009
PB Oyo Butsuri Gakkai
DT Journal; General Review
LA Japanese
AB A review with 14 refs. on the basic research results and industrial examples of the chemical treatment of plastic wastes using supercrit . water. Hydrolysis of condensation polymers such as polyethers, polyesters and polycarbonates has been studied in supercrit. water without acid or base catalysts used. Polyethylene terephthalate was perfectly decomposed to give quant. terephthalic acid. Bisphenol A was also converted into phenol in good yields. Tolylene diisocyanate to tolylene diamine process is illustrated as an industrial chemical recycling.

L13 ANSWER 11 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2000:120926 CAPLUS
DN 132:153047
TI Recovery of aromatic dicarboxylic acids from polyesters
IN Matsubara, Kazuhiro; Suzuki, Akira; Iwamori, Tomoyuki; Kawasaki, Shinichiro
PA Asahi Chemical Industry Co., Ltd., Japan; Japan Organo Co., Ltd.
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000053801	A	20000222	JP 1998-232380	19980805
	JP 3850149	B2	20061129		
PRAI	JP 1998-232380		19980805		

AB Polyesters, polycondensates of aromatic dicarboxylic acids and polyhydric alcs., containing fine inorg. solids with primary particle diameter ≤1 μm, are hydrolyzed by using liquid subcrit. or supercrit. waters of amts. 2-20-times weight ratio at >300° and ≤500° and 9-50 MPa, the fine inorg. solids are separated and removed at >300° and ≤500° while synthesized aromatic dicarboxylic acids are dissolved in the waters, then the systems are cooled and depressurized, and aromatic dicarboxylic acids are precipitated and recovered. Thus, a poly(ethylene terephthalate) (fiber grade, Sb2O3 220 pm, TiO2 0.2%) was melted, hydrolyzed, and filtered. The liquid was cooled and crystallized to obtain terephthalic acid in yield 80-95% and purity >99%.

L13 ANSWER 12 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1999:418680 CAPLUS
DN 131:120150
TI Development of a chemical recycling process for waste plastics using supercritical water
AU Nagase, Yoshiyuki; Yamagata, Masahiro; Fukuzato, Ryuichi
CS Technological Development Group, Chemical & Environmental Technology Laboratory, Japan
SO KOBELCO Technology Review (1999), 22, 11-14
CODEN: KTREE6; ISSN: 0913-4794
PB Kobe Steel Ltd.
DT Journal
LA English
AB A new chemical recycling process for poly(ethylene terephthalate) (PET) and

polyurethane using supercrit. water was developed. The monomers obtained from hydrolysis using supercrit. water were the raw material components of each polymer. The purity of the terephthalic acid obtained from the PET recycling progress was .apprx.99%. Furthermore, this process has a reduced reaction time and is simpler when compared with conventional methods such as methanolysis and glycolysis.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 13 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1998:591052 CAPLUS
DN 129:217461
TI Chemical recycling process for waste plastics using supercritical water
AU Fukuzato, Ryuichi
CS Eng. Div., Kobe Steel, Ltd., Tokyo, 135-8381, Japan
SO Shigen Kankyo Taisaku (1998), 34(12), 1165-1171
CODEN: SKTAET; ISSN: 0916-9172
PB Kogai Taisaku Gijutsu Doyukai
DT Journal; General Review
LA Japanese
AB A review with 10 refs. The dissoln. of PET, polyurethane, nylon, polycarbonate, and polyolefin, and the hydrolysis or degradation of them for recycling are explained.

L13 ANSWER 14 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1998:493547 CAPLUS
DN 129:137025
TI Method of and apparatus for decomposing waste compounds containing hydrolyzable chemical bonds
IN Nagase, Yoshiyuki; Fukuzato, Ryuichi
PA Kobe Steel Ltd., Japan; Mitsui Takeda Chemicals Inc.
SO Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 854165	A1	19980722	EP 1997-100821	19970120
	EP 854165	B1	20040407		
	R: BE, DE, ES, FR, IT, NL				
	JP 09151270	A	19970610	JP 1995-313003	19951130
	JP 3659717	B2	20050615		
	KR 204839	B1	19990615	KR 1997-222	19970108
	US 6255529	B1	20010703	US 1997-784949	19970116
	BR 9700111	A	19981201	BR 1997-111	19970117
	CN 1188776	A	19980729	CN 1997-102903	19970120
	CN 1101417	B	20030212		
PRAI	JP 1995-313003	A	19951130		
	KR 1997-222	A	19970108		
	US 1997-784949	A	19970116		
	BR 1997-111	A	19970117		
	EP 1997-100821	A	19970120		

AB A method of decomposing wastes containing target compds. having ≥1 ether, ester, amide and isocyanate bond comprises continuously supplying the wastes, e.g., PET polyester oligomers or TID dimer and trimer in a molten or liquid state to a reactor, continuously supplying super-critical H2O or high pressure/high temperature H2O to the reactor, bringing the H2O into contact with the wastes, thereby decomposing the target compds. and then recovering them as raw material compds. or derivs.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 15 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1993:256852 CAPLUS
DN 118:256852
TI Process for hydrolysis and/or pyrolysis of natural and synthetic polymer wastes
IN Arai, Kunio; Ajiri, Masafumi; Igawa, Noboru; Furuta, Satoshi; Fukusato, Ryuichi
PA Kobe Steel, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05031000	A	19930209	JP 1991-255725	19910907
	JP 3042076	B2	20000515		
	JP 2000103901	A	20000411	JP 1999-273173	19990927
	JP 3225238	B2	20011105		
PRAI	JP 1990-238085	A1	19900908		
	JP 1991-255725	A3	19910907		

AB The title process is carried out in supercrit. or pseudocrit. water as reaction medium and in the presence of acids at concentration ≤2% as catalysts. Polymers including cellulose, lignin, chitin, chitosan, silk, nylon, polyester, polyurethane, polystyrene, polyethylene, polypropylene, etc. can be treated by the process (no complete data, except for cellulose).

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 NEWS  6  MAR 30  RDISCLOSURE reloaded with enhancements
 NEWS  7  APR 02  JICST-EPLUS removed from database clusters and STN
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 NEWS 13  MAY 08  CA/CAplus Indian patent publication number format defined
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                  fields
 NEWS 15  MAY 21  BIOSIS reloaded and enhanced with archival data
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 NEWS 17  MAY 21  CA/CAplus enhanced with additional kind codes for German
                  patents
 NEWS 18  MAY 22  CA/CAplus enhanced with IPC reclassification in Japanese
                  patents
 NEWS 19  JUN 27  CA/CAplus enhanced with pre-1967 CAS Registry Numbers
 NEWS 20  JUN 29  STN Viewer now available
 NEWS 21  JUN 29  STN Express, Version 8.2, now available
 NEWS 22  JUL 02  LEMBASE coverage updated
 NEWS 23  JUL 02  LMEDLINE coverage updated
 NEWS 24  JUL 02  SCISEARCH enhanced with complete author names
 NEWS 25  JUL 02  CHEMCATS accession numbers revised
 NEWS 26  JUL 02  CA/CAplus enhanced with utility model patents from China
 NEWS 27  JUL 16  CAplus enhanced with French and German abstracts
 NEWS 28  JUL 18  CA/CAplus patent coverage enhanced

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               CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 05 JULY 2007.

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=> s polyester
        270699 POLYESTER
        240107 POLYESTERS
L1      355774 POLYESTER
                  (POLYESTER OR POLYESTERS)

=> s no chlorine
       3558848 NO
        195728 NOS
          1940 NOES
       3672036 NO
                  (NO OR NOS OR NOES)
        137904 CHLORINE
           820 CHLORINES
        138441 CHLORINE
                  (CHLORINE OR CHLORINES)
L2         201 NO CHLORINE
                  (NO(W)CHLORINE)

=> s L1 and L2
L3          13 L1 AND L2

=> s base
        716572 BASE
        160036 BASES
L4      813055 BASE
                  (BASE OR BASES)

=> s L3 and L4
L5           3 L3 AND L4

=> s hydrolysis
```

```
        434693 HYDROLYSIS
          3161 HYDROLYSES
L6      435585 HYDROLYSIS
                 (HYDROLYSIS OR HYDROLYSES)

=> s L1 and L6
L7        5936 L1 AND L6

=> s L7 and L4
L8         410 L7 AND L4

=> s L8 and L6
L9         410 L8 AND L6

=> s L9 and L4
L10        410 L9 AND L4

=> s supercritical water
         26307 SUPERCRITICAL
             1 SUPERCRITICALS
         26307 SUPERCRITICAL
                 (SUPERCRITICAL OR SUPERCRITICALS)
         43980 SUPERCRIT
             1 SUPERCRITS
         43981 SUPERCRIT
                 (SUPERCRIT OR SUPERCRITS)
         45511 SUPERCRITICAL
                 (SUPERCRITICAL OR SUPERCRIT)
       2558924 WATER
        265562 WATERS
       2615943 WATER
                 (WATER OR WATERS)
L11       3471 SUPERCRITICAL WATER
                 (SUPERCRITICAL(W)WATER)

=> s L10 and L11
L12           2 L10 AND L11

=> d L12 1-2 bib abs

L12  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2007 ACS on STN
AN   2004:413008  CAPLUS
DN   140:407767
TI   Depolymerization process for plastics
IN   Hidaka, Masaru; Nakagawa, Takaharu; Urabe, Toyoyuki; Maekawa, Tetsuya;
     Yoshida, Hiroyuki
PA   Matsushita Electric Works, Ltd., Japan
SO   PCT Int. Appl., 18 pp.
     CODEN: PIXXD2
DT   Patent
LA   Japanese
FAN.CNT 1
     PATENT NO.           KIND   DATE        APPLICATION NO.         DATE
     ---------------      ----   --------    --------------------    --------
PI   WO 2004041917         A1    20040521    WO 2003-JP14136         20031106
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE,
             GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
             TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
             BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
             ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
             TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
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     AU 2003277574         A1     20040607    AU 2003-277574          20031106
     EP 1580222            A1     20050928    EP 2003-810619          20031106
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
     CN 1711312            A      20051221    CN 2003-80102845        20031106
     US 2006247465         A1     20061102    US 2006-533432          20060421
PRAI JP 2002-324398        A      20021107
     JP 2003-281994        A      20030729
     WO 2003-JP14136       W      20031106
AB   A process is provided for decomposing a polymeric substance (e.g.,
     polyester) into monomers or oligomers by hydrolysis with
     sub- or super-critical water, wherein at least a part of the polymeric
     substance is composed of a polymer containing units derived from an organic
acid
     in the mol. structure and that the polymeric substance is brought into
     contact with sub- or super-critical water in the presence of a slightly
     water-soluble base (e.g., CaCO3, BaCO3) resulting in improved yield
     of the organic acid and the depolymn. rate.
RE.CNT  7     THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12  ANSWER 2 OF 2  CAPLUS  COPYRIGHT 2007 ACS on STN
AN   2000:181435  CAPLUS
DN   133:44433
TI   Chemical recycling of waste polymers by decomposition in
     supercritical water
AU   Adschiri, Tadafumi
CS   Dep. Chem. Eng., Tohoku Univ., Japan
SO   Oyo Butsuri (2000), 69(3), 318-319
     CODEN: OYBSA9; ISSN: 0369-8009
PB   Oyo Butsuri Gakkai
DT   Journal; General Review
LA   Japanese
AB   A review with 14 refs. on the basic research results and industrial
     examples of the chemical treatment of plastic wastes using supercrit
     . water.  Hydrolysis of condensation polymers such as
     polyethers, polyesters and polycarbonates has been studied in
     supercrit. water without acid or base
     catalysts used.  Polyethylene terephthalate was perfectly decomposed to give
     quant. terephthalic acid.  Bisphenol A was also converted into phenol in
     good yields.  Tolylene diisocyanate to tolylene diamine process is
     illustrated as an industrial chemical recycling.


=>

---Logging off of STN---


=>
Executing the logoff script...


=> LOG Y

COST IN U.S. DOLLARS                              SINCE FILE      TOTAL
                                                    ENTRY     SESSION
FULL ESTIMATED COST                                 22.08       22.29

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)        SINCE FILE      TOTAL
                                                    ENTRY     SESSION
CA SUBSCRIBER PRICE                                 -1.56       -1.56

STN INTERNATIONAL LOGOFF AT 11:57:25 ON 18 JUL 2007
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